

Claims

1. A valve system for an internal combustion engine, comprising:

an intake-side rocker shaft;

an exhaust-side rocker shaft;

intake-side rocker arms having ends thereof connected to intake valves and supported on said intake-side rocker shaft such that said intake-side rocker arms rock, the intake-side rocker arms being driven by an intake cam; and

exhaust-side rocker arms having ends thereof connected to exhaust valves and supported on said exhaust-side rocker shaft such that said exhaust-side rocker arms rock, the exhaust-side rocker arms being driven by an exhaust cam,

wherein one of said rocker shafts which requires to have a higher stiffness has a larger diameter.

2. A valve system for an internal combustion engine according to claim 1, wherein said intake-side rocker arms includes,

a first rocker arm having an end thereof connected to the intake valve and supported on said intake-side rocker shaft such that said first rocker arm rocks, the first rocker arm being driven by a first low-lift cam,

a second rocker arm having an end thereof connectable to said first rocker arm and supported on said intake-side rocker shaft such that said second rocker arm rocks, the second rocker

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arm being driven by a high-lift cam causing a larger valve lift than the first low-lift cam, and

a connection switching mechanism that selectively connects or disconnects said second rocker arm to or from said first rocker arm,

wherein said intake-side rocker shaft has a larger diameter than a diameter of said exhaust-side rocker shaft.

3. A valve system for an internal combustion engine according to claim 1, wherein,

said intake valves includes a first intake valve and a second intake valve, and

said intake-side rocker arms includes,

a first rocker arm having an end thereof connected to said first intake valve and supported on said intake-side rocker shaft such that said first rocker arm rocks, the first rocker arm being driven by a first low-lift cam,

a third rocker arm having an end thereof connected to said second intake valve and supported on said intake-side rocker shaft such that said third rocker arm rocks, the third rocker arm being driven by a second low-lift cam that causes a smaller valve lift than the first low-lift cam,

a second rocker arm having an end thereof connectable to said first rocker arm and supported on said intake-side rocker shaft such that said second rocker arm rocks, the second rocker arm being

driven by a high-lift cam that causes a larger valve lift than the first low-lift cam, and

a connection switching mechanism that selectively connects or disconnects said second rocker arm to or from said first rocker arm and said third rocker arm,

wherein said intake-side rocker shaft has a larger diameter than a diameter of said exhaust-side rocker shaft.

4. A valve system for an internal combustion engine according to any of claims 1 to 3, wherein said intake-side rocker arms includes center-pivot type rocker arms with middle parts thereof pivoted by said intake side rocker shaft.

5. A valve system for an internal combustion engine according to claim 4, wherein said intake-side rocker arms and said exhaust-side rocker arms are driven by a single cam shaft disposed between said intake-side rocker shaft and said exhaust-side rocker shaft.